UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,684	09/19/2001	Clint H. O'Connor	016295.0689 (DC-03044)	1191

7590 05/02/2006	EXAMINER
Adam L. Stroud	HOSSAIN, TANIM M
Baker Botts L.L.P.	

ART UNIT	PAPER NUMBER
2145	

One Shell Plaza
910 Louisiana
Houston, TX 77002-4995

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/955,684	O'CONNOR ET AL.
	Examiner	Art Unit	
	Tanim Hossain	2145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 April 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter (U.S.

2003/0023885) in view of Butka (U.S. 6,735,704) in further view of Lagod (U.S. 6,583,521).

As per claim 1, Potter teaches a computer system comprising: a plurality of processing

resources operable to process data (paragraph 0047); and a resource management engine

associated with the processing resources, the resource management engine operable to scale the

number of the plurality of processing resources in relation to a plurality of demand requirements

(paragraphs 0047-0049, 0052). Potter does not specifically teach the use of a plurality of power

supplies associated with the processing resources, which supply power to the plurality of

resources, nor the scaling of power supplies providing power to the processing resources based

on power-demand requirements. Butka teaches remotely controlling the allocation of power

supplies to computer processing components in relation to demand (column 1, lines 20-29; and

column 2, lines 45-59). It would have been obvious to one of ordinary skill in the art to combine

the remote power supply management system as taught by Butka into the computer power

allocation system as taught by Potter, to arrive at a system in which remotely scaling power

supplies and usage based on demand requirements is performed. The motivation for doing so

lies in the fact that having multiple power supplies would allow for a larger-scale system to enjoy

the benefits of efficient power consumption, such that there is no system overload due to demand

or usage. Both inventions are from the same field of endeavor, namely the efficient allocation of

power in a network-enabled computer system. Potter-Butka does not specifically teach the

management engine comprising at least one dynamic table listing historical demand data and

does not specifically teach the scaling of processing resources and power supplies based on the

historical demand data. Lagod teaches the use of historical tables, statistical data, and future

demand requirements to scale power supplies (column 6, lines 22-29; column 7, lines 23-30). It

would have been obvious to one of ordinary skill in the art at the time of the invention to include

the use of a historical demand table, as taught by Lagod, in the system which scales power

supplies and processing resources, as taught by Potter-Butka. The motivation for doing so lies in

the fact that having future and past demand data considered for power considerations would

allow further flexibility and efficiency for the invention, possibly preventing overloads or over-

consumption. All inventions are from the same field of endeavor, namely the efficient scaling of

energy based on system need.

As per claim 2, Potter-Butka-Lagod teaches the system of claim 1, wherein the

processing resources comprise mobile processors (Potter: 0022).

As per claim 3, Potter-Butka-Lagod teaches the system of claim 1, wherein the

processing resources comprise hard disk drives (Potter: 0022).

As per claim 4, Potter-Butka-Lagod teaches the system of claim 1, wherein the resource management engine scales the number of processing resources in accordance with an enterprise-wide power strategy (Potter: 0049).

As per claim 5, Potter-Butka-Lagod teaches the system of claim 1, wherein the resource management engine scales the number of processing resources by powering up additional processing resources (Potter: 0022).

As per claim 6, Potter-Butka-Lagod teaches the system of claim 1, wherein the resource management engine scales the number of processing resources by powering down the processing resources (Potter: 0022).

As per claim 7, Potter-Butka-Lagod teaches the system of claim 6, wherein the resource management engine powering down the processing resources comprises powering off the processing resource (Potter: 0022).

As per claim 8, Potter-Butka-Lagod teaches the system of claim 6, wherein the resource management engine powering down the processing resources comprises reducing the processing resource to a lower power state (Potter: 0022).

As per claim 9, Potter-Butka-Lagod teaches the system of claim 1, further comprising a plurality of capacity tables associated with the resource management engine, the capacity tables operable to store a plurality of information regarding the processing resources and the power supplies (Potter: 0027).

As per claim 10, Potter-Butka-Lagod teaches the system of claim 1, further comprising a plurality of dynamic tables associated with the resource management engine, the dynamic tables operable to store a plurality of predictive analysis information (Potter: 0027)

As per claim 11, Potter-Butka-Lagod teaches the system of claim 1, wherein the

processing resources comprise a plurality of servers (Potter: 0024).

As per claim 12, Potter-Butka-Lagod teaches the system of claim 1, wherein the

processing resources comprise a plurality of racks containing a plurality of servers (Potter: 0024,

0055).

As per claim 13, Potter-Butka-Lagod teaches the system of claim 1, further comprising

the resource management engine predicting demand requiremens (Potter: 0027).

As per claim 14, Potter-Butka-Lagod teaches the system of claim 1, further comprising

the resource management engine maintaining a power threshold among the processing resources

and power supplies (Potter: 0027).

As per claim 15, Potter-Butka-Lagod teaches a method for the optimizing of power

consumption by a computer system having a plurality of processing resources and a plurality of

power supplies associated therewith, the method comprising: receiving a demand requirement

based on historical demand data for the computer system (Potter: 0027, Butka: 5; 34-61; Lagod:

column 6, lines 22-29; column 7, lines 23-30); determining if the demand requirement requires a

processing resource change (Potter: 0027, Butka: 5; 34-61); adjusting the plurality of

processing resources to satisfy the demand requirement (Potter: 0027, Butka: 5; 34-61); and

adjusting the plurality of power resources to satisfy the demand requirement (Potter: 0027,

Butka: 5; 34-61).

As per claim 16, Potter-Butka-Lagod teaches the method of claim 15, wherein

determining if the demand requirement requires a processing resource change comprises

consulting a plurality of capacity tables (Potter: 0027).

As per claim 17, Potter-Butka-Lagod teaches a method of claim 15, wherein determining if the demand requirement requires a processing resource change comprises deciding whether to power up additional processing resources of the plurality of power resources (Potter: 0027, Butka: 5; 34-61).

As per claim 18, Potter-Butka-Lagod teaches a method of claim 15, wherein determining if the demand requirement requires a processing resource change comprises deciding whether to power down processing resources (column 10, lines 10-34).

As per claim 19, Potter-Butka-Lagod teaches the method of claim 15, wherein adjusting a plurality of processing resources comprises powering down at least one of the plurality of processing resources when the demand requirement decreases (Potter: 0027, Butka: 5; 34-61).

As per claim 20, Potter-Butka-Lagod teaches the method of claim 19, wherein powering down processing resources comprises turning off one or more of the plurality of processing resources (Potter: 0027, Butka: 5; 34-61).

As per claim 21, Potter-Butka-Lagod teaches the method of claim 19, wherein powering down at least one of the plurality of processing resources comprises powering at least one processing resource to a lower power state (Potter: 0027, Butka: 5; 34-61).

As per claim 22, Potter-Butka-Lagod teaches the method of claim 15, wherein adjusting the plurality of processing resources comprises powering up additional processing resources when the demand requirement increases (Potter: 0027, Butka: 5; 34-61).

As per claim 23, Potter-Butka-Lagod teaches the method of claim 22, wherein powering up additional processing resources comprises integrating the additional processing resource with the already operating resources (Potter: 0027, Butka: 5; 34-61).

As per claim 24, Potter-Butka-Lagod teaches the method of claim 15, further comprising: predicting future demand requirements (Potter: 0049); and adjusting the plurality of processing resources to meet the future demand requirements (Potter: 0027, Butka: 5; 34-61).

As per claim 25, Potter-Butka-Lagod teaches the method of claim 24, wherein predicting demand requirements comprise consulting a plurality of dynamic tables, the dynamic tables listing historical demand data associated with the computer system (Potter: 0027; Lagod: column 6, lines 22-29; column 7, lines 23-30).

As per claim 26, Potter-Butka-Lagod teaches the method of claim 15, further comprising maintaining a power threshold in the plurality of processing resources (Potter: 0027, Butka: 5; 34-61).

Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reneris (U.S. 5,784,628) in view of Lagod (U.S. 6,583,521) in further view of Butka.

As per claim 27, Reneris teaches a method for managing power consumption in a computer system, but does not specifically teach the storing of historical data in a plurality of dynamic tables, the historical data corresponding to previous demands on the computer system. Lagod teaches the storing of historical data in a plurality of dynamic tables, where the data corresponds to previous demands (Lagod: column 6, lines 22-29); and predicting future demand requirements using the historical data in the dynamic tables (Lagod: column 7, lines 23-30). It would have been obvious to one of ordinary skill at the time of the invention to include the storage of historical data and predicting power needs in relation to demand as taught by Lagod in the computer system of Reneris. The motivation for doing so lies in the fact that Lagod teaches

power generation in any type of customer system, which does not preclude a computer system (Lagod: column 4, lines 1-15). Additionally, the keeping of dynamic historical data in a table would allow for easy access of power information, to allow for the ability to make power-change decisions. Because Reneris' field of endeavor is drawn to the efficient use of power in a system, and Lagod's field of endeavor is also drawn to the efficient use of power in a system, it would have been obvious to one of ordinary skill in the art to combine these teachings of the two inventions. Reneris-Lagod determines if a power change is needed to meet demand requirements, and adjusting power resources in advance to meet the future demand requirements. However, Reneris-Lagod does not specifically teach determining if a processing resource change is needed to efficiently meet the future demand requirements; and adjusting a plurality of processing resources in advance to meet the future demand requirements. Butka teaches the scaling and adjusting of processing resources based on demand requirements (Butka: column 1, lines 20-29; and column 2, lines 45-59). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the scaling of processing resources, as taught by Butka, in the computer system of predictive and historical demand calculations as taught by Reneris-Lagod. The motivation for doing so lies in the fact that having the ability to scale back resources in relation to demand predictions would enable energy to be used optimally. All inventions are from the same field of endeavor, namely the efficient management of power.

As per claim 28, Reneris-Lagod-Butka teaches the method of claim 27, wherein predicting future demand requirements comprises dynamically adjusting for global occurrences that affect demand requirements (Lagod: column 7, lines 23-30; column 8, line 66 – column 9, line 10).

As per claim 29, Reneris-Lagod-Butka teaches the method of claim 27, wherein the historical data comprises load data from a plurality of demand requirements from previous time periods (Lagod: column 7, lines 31-42).

As per claim 30, Reneris-Lagod-Butka teaches the method of claim 27, wherein adjusting the processing resources in advance comprises powering up additional processing resources to address the future demand requirements (Lagod: column 7, lines 23-42).

Response to Arguments

Applicant's arguments filed on April 13, 2006 have fully been considered and are respectfully traversed by the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanim Hossain whose telephone number is 571/272-3881. The examiner can normally be reached on 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571/272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tanim Hossain
Patent Examiner
Art Unit 2145

JASON CARDONE
SUPERVISORY PATENT EXAMINER